

# New Year Chaos



It's New Year's Day and everyone's in line for the Wonderland rollercoaster ride! There are a number of people queued up, and each person wears a sticker indicating their *initial* position in the queue. Initial positions increment by 1 from 1 at the front of the line to  $n$  at the back.

Any person in the queue can bribe the person *directly in front* of them to swap positions. If two people swap positions, they still wear the same sticker denoting their original places in line. One person can bribe *at most two others*. For example, if  $n = 8$  and *Person 5* bribes *Person 4*, the queue will look like this: 1, 2, 3, 5, 4, 6, 7, 8.

Fascinated by this chaotic queue, you decide you must know the minimum number of bribes that took place to get the queue into its current state!

## Function Description

Complete the function `minimumBribes` in the editor below. It must print an integer representing the minimum number of bribes necessary, or `Too chaotic` if the line configuration is not possible.

`minimumBribes` has the following parameter(s):

- $q$ : an array of integers

## Input Format

The first line contains an integer  $t$ , the number of test cases.

Each of the next  $t$  pairs of lines are as follows:

- The first line contains an integer  $t$ , the number of people in the queue
- The second line has  $n$  space-separated integers describing the final state of the queue.

## Constraints

- $1 \leq t \leq 10$
- $1 \leq n \leq 10^5$

## Subtasks

For 60% score  $1 \leq n \leq 10^3$

For 100% score  $1 \leq n \leq 10^5$

## Output Format

Print an integer denoting the minimum number of bribes needed to get the queue into its final state. Print `Too chaotic` if the state is invalid, i.e. it requires a person to have bribed more than 2 people.

## Sample Input

```
2
5
2 1 5 3 4
5
2 5 1 3 4
```

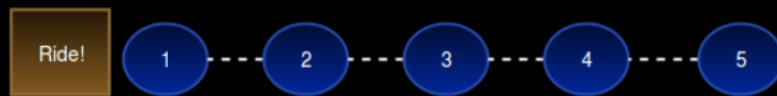
## Sample Output

```
3
Too chaotic
```

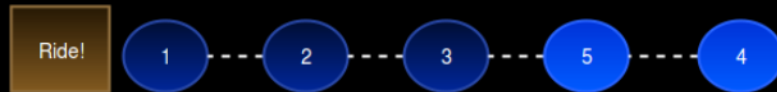
## Explanation

### Test Case 1

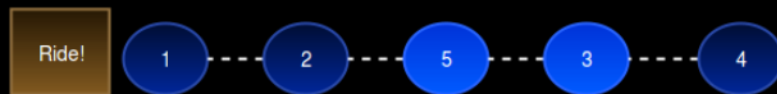
The initial state:



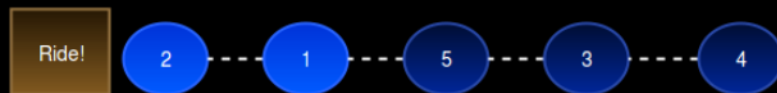
After person 5 moves one position ahead by bribing person 4:



Now person 5 moves another position ahead by bribing person 3:



And person 2 moves one position ahead by bribing person 1:



So the final state is 2, 1, 5, 3, 4 after three bribing operations.

### Test Case 2

No person can bribe more than two people, so its not possible to achieve the input state.